

# PATENT COOPERATION TREATY

From the:  
INTERNATIONAL SEARCHING AUTHORITY

To:

Viering, Jentschura & Partner  
P.O Box 1088  
Rochor Post office  
Rochor Road, Singapore 911833

## PCT

### WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing (day/month/year)	18 JAN 2005
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Applicant's or agent's file reference  
P100553

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
**PCT/SG2004/000356**

International filing date (day/month/year)  
26 October 2004

Priority date (day/month/year)  
31 October 2003

International Patent Classification (IPC) or both national classification and IPC  
**Int. Cl.<sup>7</sup> G11C 11/15**

Applicant  
**AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH et al**

**1. This opinion contains indications relating to the following items:**

- |                                     |              |  |
|-------------------------------------|--------------|--|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the opinion   |
| <input type="checkbox"/>            | Box No. II   | Priority   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention   |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited  |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application   |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application  |

**2. FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

**3. For further details, see notes to Form PCT/ISA/220.**

Name and mailing address of the IPEA/AU  
AUSTRALIAN PATENT OFFICE  
PO BOX 200, WODEN ACT 2606, AUSTRALIA  
E-mail address: [pct@ipaustalia.gov.au](mailto:pct@ipaustalia.gov.au)  
Facsimile No. (02) 6285 3929

Authorized Officer

**PETER THONG**  
Telephone No. (02) 6283 2128

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/SG2004/000356

Box No. I      Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/SG2004/000356

Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 5-9, 13, 14, 16, 17, 20-24, 26	YES
	Claims 1-4, 10-12, 15, 18, 19, 25	NO
Inventive step (IS)	Claims 5-9, 13, 14, 16, 17, 20-24, 26	YES
	Claims 1-4, 10-12, 15, 18, 19, 25	NO
Industrial applicability (IA)	Claims 1-26	YES
	Claims	NO

2. Citations and explanations:

D1: WO 2002/059973 A2

**NOVELTY:**

The arrangement in all the independent claims 1-4, 10-12, 15, 18, 19, 25 as broadly drafted is not novel in the light of citation D1.

The application (figure 3A for example) shows an arrangement featuring a block comprising several continuous layers/slabs that collectively provides for a plurality of active areas (memory cells).

However, this feature which appears to be the only feature distinguishing the invention from some prior art MRAM arrangements, is not reflected in any of the independent claims.

Consequently, the claimed arrangement cannot be considered novel in the light of citation D1 which clearly discloses a block of physically interconnected memory stacks (figures 3 and 4) as well as a common electrode ie bit line (page 7 lines 21 to 24 and figure 3 of D1) plus other features of the independent claims.

The claimed arrangement is therefore anticipated by citation D1 as well as by most existing prior art MRAM disclosures.

**INVENTIVE STEP:**

Claims 1-4, 10-12, 15, 18, 19, 25 as above.